REMARKS

In the Official Action mailed on **19 May 2006**, the Examiner reviewed Claims 1-17. Claims 1-17 were rejected under 35 U.S.C. §103(a) as being anticipated by Santhanam (USPN 5,704,053, hereinafter "Santhanam"), in view of Wu et al. (US Pub. No. 2003/0066061 hereinafter "Wu").

Rejections under 35 U.S.C. §102(b)

Independent claims 1, 8, and 13 were rejected as being anticipated by Santhanam in view of Wu. Applicant respectfully points out that Wu does not teach prefetching. Instead, Wu teaches compiler transformation of code using value specialization (see Wu, Abstract). Value specialization operates by substituting a high-probability value for the result of an often-calculated piece of code, wherein the high-probability value is the typical result of the often-calculated piece of code (see Wu, page 5, paragraph [0065]). For a given region of code, Wu uses a frequency ratio of the frequency of live-in and live-out values that have the highest likelihood of occurring during execution of the region of code to the historical set of live-in and live-out values for the region of code to determine whether the region of code is eligible for value specialization (see Wu, page 5, paragraphs [0069]-[0073]).

In contrast, the present invention teaches calculating a "prefetch ahead distance" to determine how many loop iterations ahead to prefetch for (see page 15, lines 5-6 of the instant application). To facilitate in calculating the prefetch ahead distance, the present invention examines processor characteristics, such as the cache line size and the "outstanding prefetches" value, and loop characteristics, such as the stride (see page 15, lines 8-25 of the instant application). The present invention is advantageous because it obtains data in advance of the time when the processor uses the data. Furthermore, the present

invention increases efficiency by considering processor characteristics in determining how far ahead to prefetch data.

There is nothing within Santhanam or Wu, either explicitly or implicitly, that teaches using a prefetch ahead distance to determine how many loop iterations ahead to prefetch for. Furthermore, Wu is directed towards determining whether calculations should be replaced with static values that are typically the result of the calculations. In contrast, the present invention is directed towards prefetching data in advance of when the processor uses the data.

Furthermore, as the Examiner avers in the office action of 19 May 2006, Santhanam does not teach calculating a prefetch ahead distance, wherein the prefetch ahead distance includes the ratio of outstanding prefetches to the number of prefetch streams (see page 4, the office action of 19 May 2006).

Accordingly, Applicant has amended independent claims 1, 8, and 13 to clarify that the present invention calculates a prefetch ahead distance, wherein the prefetch ahead distance indicates how many loop iterations ahead to prefetch for. These amendments find support on page 15, lines 5-25 of the instant application.

Hence, Applicant respectfully submits that independent claims 1, 8, and 13 as presently amended are in condition for allowance. Applicant also submits that claims 2-7, which depend upon claim 1, claims 9-12, which depend upon claim 8, and claims 14-17, which depend upon claim 13, are for the same reasons in condition for allowance and for reasons of the unique combinations recited in such claims.

CONCLUSION

It is submitted that the present application is presently in form for allowance. Such action is respectfully requested.

Respectfully submitted,
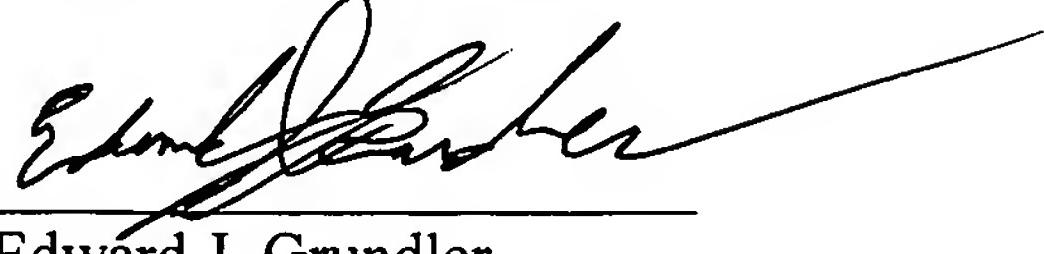
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